A88.11/17-2:946

UNITED STATES DEPARTMENT OF AGRICULTURE
Production and Marketing Administration
Cotton Branch

FIBER AND SPINNING TEST RESULTS FOR SOME UPLAND COTTONS GROWN IN SELECTED STANDARDIZED-VARIETY AREAS
CROP OF 1946

Washington, D. C.
December 1946

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FIBER AND SPINNING TEST RESULTS FOR SOME UPLAND COTTONS GROWN IN SELECTED STANDARDIZED-VARIETY AREAS, CROP OF 1946 1/

Results of fiber and spinning tests made on the leading varieties of cotton have been published by the Department during the past several years. Those tests, however, were generally made on cotton grown experimentally at State or Federal experiment stations, and not on samples that were collected to represent large areas in which the respective varieties were produced on a commercial basis. The purpose of this report is to provide cotton merchants, manufacturers, and others with data on the spinning qualities of cottons that were grown commercially in standardized-variety areas during the 1946 crop year.

Publication of the accompanying results should add considerably to available information on manufacturing qualities of those varieties represented. The early release of such data should be helpful to cotton merchants and manufacturers in locating commercial lots of cottons to meet their specific requirements. Farmers in those areas that produce cotton having the characteristics desired by manufacturers for specific uses should benefit by an increased demand for their product. A recent survey indicated that variety designations are now used by mills to supplement commercial quality designations for approximately 12 percent of total domestic mill purchases.

Selection of Areas and Samples

Samples for testing were collected from those areas that were expected, in each instance, to produce more than 25,000 bales of a specified variety. In a few of the areas included in the study, the production will be less than that quantity.

The cottons included in this study were produced commercially in cotton-improvement communities or areas located in all regions of the Cotton Belt. The spinning test samples for the different areas were obtained by combining cotton samples that had been submitted for classification under the provisions of the Smith-Doxey Act.

In an effort to obtain test samples that were truly representative of the varieties in the specified areas, only those ginning areas purported to be completely standardized on a single variety of cotton were selected for the study. Spot checks, made

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1/ Prepared in the Research and Testing Division.

within each area, indicated that although 100 percent standardization had not been attained in many instances, 95 percent or more of the cotton acreage in the immediate ginning areas had been planted to the predominating variety in those areas from which samples were obtained for testing. A careful check was made of the growers who produced the samples composited into the spinning lots in order to make certain that only samples of the specified variety were included. Areas represented in the study produce sufficiently large quantities of cotton to permit merchants or manufacturers to obtain lots of even-running grade and staple. The grade and staple of the cottons here reported were, in each instance, those prevailing at the time of selection of the samples early in the season. Obviously, other qualities are also available in quantity in each area owing to normal seasonal variations. The proportion of the total crop ginned to December 1 that was classed as the grade and staple combination selected in each area for testing, is shown in column 4 of table 1.

As previously indicated, the spinning test lots represent combined samples from individual bales, which samples were obtained at the Department's cotton classing offices. After classifications had been made, samples representing the most common grade and staple length for the area during the early season were reserved and grouped. The groups of samples, sufficiently large to provide at least 15 pounds of lint, were then given a review classification in order to assure a spinning sample composited from even-running grade and staple length subsamples. At this point, also, any samples from producers who were in doubt as to the reliability of the variety identification were eliminated. These even-running lots of bale samples were then shipped from the various classification offices to the spinning laboratories operated by the Cotton Branch. The method of collecting samples for this study assured a uniform sample of cotton representative of the quality prevailing in the immediate producing area of each gin at the time the samples were obtained.

Test Procedure

At the spinning laboratories, each group of samples representing an area was separated into 3 spinning test lots by dividing each of the individual bale samples into 3 parts. The individual classification samples represented the two sides of each bale, and in making the division both parts of the sample were divided vertically, with one-third of each going into a composite for the spinning tests. Thus, the three test lots, consisting of approximately 5 pounds each, for each area contained equal portions from each of the bale samples. Each lot was then thoroughly mixed by hand preparatory to testing. Two replicate spinning tests were run on different days and the results averaged to give the values here reported. The third sample was held in reserve for possible use in case differences were found in the spinning results of the duplicate samples. There were, however, no significant differences in the spinning test results for the duplicate samples.

Thirty-two pinches of cotton were taken at random from each of the spinning test lots and composited into a hand-made sliver in accordance with standard procedure. These slivers were used for the fiber tests. Fiber tests were performed, in accordance with the standard procedures of the laboratories, under controlled atmospheric conditions at 65 percent relative humidity and 70° F. Fiber tests include determination of length, uniformity ratio, tensile strength, fineness in terms of weight per inch of fiber, and maturity in terms of percentage of thick-walled fibers.

The spinning tests were performed by a technique, developed in the laboratories of the Cotton Branch, for testing small samples. Each test sample was passed through the following standard type textile machines:

Finisher picker (twice)
Card
Drawing Frame (twice)
Roving Frame (super-draft type)
Spinning Frame (long-draft)

In this procedure, thorough mixing takes place in the first passage through the pickers and the additional processing gives mixing comparable to the usual commercial manufacturing that employs similar machine organization.

Basis for Interpretation of Test Results

In the interpretation of the test results, which are presented in tables 1 and 2, beginning on page 10, the following explanation of the application of these data should be helpful.

Laboratory Measures of Fiber Properties

Fiber length - Data here reported were determined by the fibrograph instrument which is a photoelectric device for determining certain length values with respect to the fibers in a sample of cotton. The "upper half mean length" of a sample of cotton, as determined by this instrument and as reported in column 5 of table 1 for the various lots of cotton tested, provides a measure of the average length of fibers in the longer half of the sample, and is expressed in terms of decimal fractions of an inch.

The upper half mean length agrees fairly closely with the classer's designation of staple length for cottons of short to medium lengths. It may vary from the classer's designation, however, because of fiber characteristics other than length which may be taken into account by the classer. Mean length, as reported in column 6 of table 1, is the average length of all fibers in the sample, excluding those shorter than 1/4 inch.

The "uniformity ratio," as reported in column 7 of table 1, expresses the ratio between the mean length of the fibers and the upper half mean length, and provides a relative measure of the length uniformity of the fibers. The larger the figure reported, the more uniform the fiber length. Uniformity of fiber length is a very desirable characteristic from the standpoint of yarn strength, yarn appearance, manufacturing waste, and general processing performance. Attention is called to the fact, however, that this measure of fiber length uniformity is approximate only. For practical purposes, comparisons between samples from the standpoint of length uniformity may be made according to the following descriptive designations:

Uniformity ratio	
Above 80	Uniform in fiber length
76 to 80	Average uniformity
71 to 75	Slightly irregular in fiber length
70 and below	Irregular in fiber length

Fineness of fibers is reported in column 8 of table 1, and is expressed in terms of weight per unit of fiber length. The larger the figure reported, the coarser the fibers, and, conversely, the smaller the figure, the finer the fibers. As a general rule, long cottons are fine-fibered and short cottons, coarse-fibered. In general, fiber fineness contributes to yarn strength. Very fine fibers, however, tend to increase neppiness and to reduce the rate of processing, so that the desirability of fiber fineness depends on the specific end product or use. For purposes of comparison, the following adjective ratings may be applied:

Fiber fineness (Micrograms per inch of fiber)	
Below 3.0	Very fine
3.0 to 3.9	Fine
4.0 to 4.9	Average
5.0 to 5.9	Slightly coarse
6.0 and above	Coarse

Fiber maturity - A false impression of inherent fineness is frequently imparted by highly immature cottons, and for this reason a measure of maturity is almost a necessity in evaluating cottons on the basis of their weight per unit of fiber length. Maturity is determined by examining the fibers under high-powered magnification to determine the relative thickness of the fiber cell walls. In general, thick-walled fibers indicate maturity, whereas thin-walled fibers indicate immaturity. Although thickness of cell wall is to some extent a varietal characteristic, this property varies significantly with seasonal and other growth conditions. The following descriptive terms may be applied to the percentage data reported in column 9 of table 1.

Fiber maturity (Percent)	
Above 84	Very mature
77 to 84	Mature
68 to 76	Average
60 to 67	Immature
Below 60	Very immature

Fiber strength - Tests were made by the Pressley flat bundle method but the results are reported in column 10 of table 1 in the more familiar terms of tensile strength, that is, 1,000 pounds per square inch. As a general rule, fiber strength is a very important factor in determining yarn strength. Cottons with good fiber strength give less trouble in spinning than weak-fibered cottons. The values reported under this caption may be classified as follows:

Fiber strength (1,000 pounds per square inch)	
100 and above	Superior
90 to 99	Excellent
83 to 89	Very good
78 to 82	Average
72 to 77	Fair
Below 72	Weak

Commercial Classification

The grade and staple length of the various lots of cotton tested, as determined by the Appeal Board of Review Examiners in accordance with the official cotton standards, are reported in columns 1 and 2 respectively, of table 1, and columns 2 and 5, respectively, of table 2.

Grade provides an indication of waste content of a sample of cotton and indirectly of the extent of fiber deterioration. Although, for individual samples, the quantity of waste removed is not always larger for the lower grades, past experience has shown the average percentage of total picker and card waste for the various grades of upland cotton to be approximately as follows:

Grade	Picker and card waste (Percent)
GM	6.3
SM	7.2
M	8.0
SLM	9.2
LM	11.8
SGO	14.0
GO	16.5

In comparing these average grade figures with the picker and card waste data reported in column 3 of table 2, it should be understood that variations from the averages for individual samples are attributable to the nature of the extraneous material present in the cotton, to the characteristics of the fiber, or to whether the grade designation was low because of poor color or preparation.

The staple-length designation of a sample of cotton as determined by customary classing methods, indicates the length of a "typical portion" of the fibers in the sample. Uniformity of fiber length, as well as other fiber properties, probably influences to some extent the classer's selection of the "typical portion" of the fibers on which the staple-length designation is based. In general, there is a fairly close relationship between the staple length as designated by the classer and the fineness and strength of the yarn that can be manufactured from the cotton. These relationships, however, are influenced by other fiber properties, the measurements of which are discussed on pages 3 - 5.

Processing Laboratory Tests

All cottons tested were spun into three counts. Those counts were determined, in each instance, by the classer's staple length designation for the test sample. They include a coarse yarn, a medium yarn, and a fine yarn, the latter designed to represent, on the average, the approximate upper limit of spinning for cotton of the respective staple lengths. The results thus provide a basis for evaluating each cotton tested in terms of a relatively wide range of yarn numbers. In order to provide comparable data, all cottons for which carded yarn tests were made were spun in 22s and 36s yarn but the third count varied with the staple length of the cotton. The following tabulation shows the three counts spun into carded yarns for the various staple lengths:

Staple length	Yarn count spun		
	Low	Medium	High
Inches			
Shorter than 7/8	14s	22s	36s
7/8 and 27/32	22s	36s	44s
15/16 through 1	22s	36s	50s
1-1/32 and longer	22s	36s	60s

The twist multiplier used in spinning was determined by the upper half mean length of the fibers and was designed, on the basis of previous tests to provide maximum yarn strength for cotton of the respective lengths. The same twist multiplier was used for all counts spun from a given cotton. The standard multipliers for specific ranges in upper half mean length are as follows:

Upper half mean length (Fibrograph) Inches	Twist Multiplier	Upper half mean length (Fibrograph) Inches	Twist Multiplier
0.62 and shorter	5.35	0.98 to 1.01	4.10
.63 to 0.66	5.15	1.02 to 1.05	4.05
.67 to .70	5.00	1.06 to 1.09	3.95
.71 to .74	4.85	1.10 to 1.13	3.90
.75 to .78	4.70	1.14 to 1.16	3.85
.79 to .82	4.60	1.17 to 1.20	3.80
.83 to .86	4.45	1.21 to 1.24	3.75
.87 to .89	4.35	1.25 to 1.28	3.70
.90 to .93	4.25	1.29 to 1.32	3.65
.94 to .97	4.20	1.33 to 1.36	3.60

Yarn strength is perhaps the most important single index of spinning quality. Good yarn strength not only increases the range of usefulness of a given cotton but it indicates good spinning and weaving performance. Strength of the three counts of yarn manufactured from each of the cottons tested is reported in columns 7, 8, and 9 of table 2. From the standpoint of strength, carded yarn may be classified as follows:

Skein strength of carded yarn

	22s yarn	36s yarn
	Pounds	Pounds
Excellent	Above 119	Above 70
Very good	109 to 119	64 to 70
Average	100 to 108	56 to 63
Fair	92 to 99	50 to 55
Poor	Below 92	Below 50

Equivalent staple length, as reported in column 6 of table 2, provides a means for comparing the yarn strengths obtained for a given cotton with those of the general average of cottons of the same staple length. The equivalent staple length reported in each instance is the staple length generally required to produce the yarn strengths obtained from that particular sample. If the length shown under this caption for a given cotton is greater than the classer's length designation as reported in column 5 of table 2, then that particular sample is above average yarn strength for that staple length. If the equivalent staple length is lower, the reverse is true. For example, if for a given test sample of cotton classed as 1 inch in staple length, yarn strengths of 113 pounds for 22s and 63 pounds for 36s, and 41 pounds for 50s yarn were obtained, the equivalent staple length would be 1-1/16 inches because, on the average, cottons classed as 1-1/16 inches in staple length produce yarn of those respective strengths. Special attention, however, is called to the fact that the equivalent staple length reported is applicable only within the range of yarn counts reported. If, in any specific instance, the equivalent staple length is materially longer than the classer's staple length designation, the performance of the cotton may or may not equal that of cottons of the actual staple length indicated, when manufactured into yarns of finer counts. This is because the fiber properties, fineness and length become increasingly more important as yarn count increases.

Neps in card web are reported in column 4 of table 2. A desirable feature of any cotton is its freedom from neps because they are a source of trouble in manufacturing cotton yarns and fabrics. Their occurrence in appreciable numbers detract from the appearance of these products, especially if they are to be dyed. If, therefore, the nep count is high, the sample is deficient in this respect and is likely to produce rough and neppy yarns, as there is a relation between yarn appearance and nep count. Excessive neppiness limits the uses for which the cotton is suitable. The following adjective descriptions will serve to classify cottons from the standpoint of neppiness:

Nep count classification

Number per 100 square inches of card web	
1 to 15	Low
16 to 25	Average
26 to 40	High
Above 40	Very high

Yarn appearance refers to the relative evenness, smoothness, and freedom from foreign matter of the yarn as evaluated by a visual comparison of the yarn with the standards adopted by the American Society for Testing Materials.

Appearance grades for 22s and 36s yarn which are common to all samples tested, as reported in columns 10 and 11 of table 2, provide a basis for comparing individual lots of cotton from the standpoint of this factor of yarn quality. Since yarn appearance is very important in many types of cotton goods, it is desirable that the appearance grades be satisfactory. The following descriptive designations will aid in evaluating the results reported:

Yarn appearance

Grade	
A and above	Excellent
B+	Very Good
B	Good
C+	Average
C	Fair
D+	Poor
D and below	Very poor

Table 1. - Qualities selected for testing and results of fiber laboratory tests of designated varieties of upland cotton grown in standardized variety areas, Crop 1946.

State, variety, and area of growth	Selected quality			Fiber laboratory test results					
				Length (Fibrograph)			Fineness (weight per inch of fiber)	Mature fibers	Fiber tensile strength 3/
	Grade 1/	Staple Length 1/	Bales Ginned to Dec. 1 2/	Upper half mean	Mean	Uni-formity ratio			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Inches	Percent	Inches	Inches	Index	Micrograms	Percent	1,000 lbs. per square inch
NORTH CAROLINA									
Coker 100									
King's Mountain	M	1 1/16	12	1.09	.89	82	4.2	76	68
Scotland Neck	M	1 1/16	6	1.07	.86	80	4.2	77	72
Shannon	SLM	1 1/32	20	1.07	.87	81	4.4	78	71
Wadesboro	SLM	1 1/32	36	1.08	.88	82	4.4	79	73
SOUTH CAROLINA									
Coker 100									
Aiken	SLM	1 1/16	31	1.06	.82	78	4.2	74	70
Easley	M	1 1/32	16	1.04	.82	79	4.6	83	72
Minturn	M	1 1/16	20	1.08	.88	81	4.5	82	72
Walterboro	M	1 1/32	39	1.09	.89	82	4.2	72	70
GEORGIA									
Deltapine 14									
Monroe	SLM	1 1/32	15	1.06	.84	80	4.2	76	76
Woodbury	SLM	1 1/16	12	1.10	.88	80	3.9	68	72
Stoneville 2B									
Tyrone	M	1 1/32	15	1.04	.82	79	4.2	75	78
ALABAMA									
Deltapine 14									
Barton	M	1 1/32	35	1.06	.88	83	4.9	82	71
Greensboro	SLM	1 1/32	28	1.00	.83	83	4.5	76	71
Huntsville	M	1 1/16	14	1.09	.88	81	4.2	76	71
Sulligent	M	1 1/32	16	1.06	.88	84	4.2	79	70
Stoneville 2B									
Boaz	M	1 1/32	46	1.06	.89	84	4.3	78	78
MISSISSIPPI									
Coker 100									
Midnight	M	1 1/8	13	1.16	.92	78	4.0	78	76
Deltapine 14									
Aberdeen	SLM	1 1/16	28	1.04	.86	82	4.6	82	77
Belzoni	SLM	1 3/32	27	1.07	.84	79	4.0	76	80
Bigbee Valley	M	1 1/32	15	1.08	.87	81	4.4	79	70
Clarkesdale	M	1 3/32	9	1.10	.88	81	4.5	81	76
Como	M	1 1/16	26	1.04	.88	85	4.5	80	81
Lyon	M	1 3/32	16	1.13	.94	82	4.4	84	76
Moss	M	1 1/16	34	1.06	.82	78	4.4	76	70
Stoneville 2B									
Michigan City	M	1 1/16	47	1.08	.92	84	4.2	78	88
Stoneville	M	1 1/16	21	1.07	.86	80	3.8	75	76
TENNESSEE									
Deltapine 14									
Brownsville	M	1 1/16	30	1.07	.92	86	4.2	79	82
Tiptonville	SLM	1 1/16	29	1.07	.89	83	4.1	80	72
Wynnberg	SLM	1 1/16	34	1.04	.86	82	3.8	76	74
MISSOURI									
Deltapine 14									
Marston	M	1 1/16	47	1.08	.86	80	4.3	82	70
Stoneville 2B									
Kennett	M	1 3/32	22	1.14	.92	82	4.1	79	72
ARKANSAS									
Deltapine 14									
Altheimer	M	1 1/16	22	1.06	.82	78	4.5	81	81
Crawfordville	M	1 3/32	18	1.06	.90	84	4.3	82	79
Roseland	SLM	1 3/32	44	1.15	.98	85	4.0	82	82
Rowden									
Scott	M	1 1/32	46	.97	.78	81	5.8	88	79
Swifton	M	1 1/32	20	1.00	.84	84	5.3	85	78

(Continued on Page 12)

1/ Classer's designation based on Official Cotton Standards.

2/ Approximate percentage of ginnings in the area that were classed as the selected grade and staple length combination up to December 1.

Table 2. - Classification, manufacturing performance, and carded yarn quality results for designated varieties of upland cotton grown in standardized variety areas, Crop 1946.

State, variety, and area of growth	Grade 1/	Picker and card waste	Neps per 100 sq. in. of card web	Staple length		Yarn skein strength			Yarn appearance 4/	
				Classer's 1/	Equivalent 2/	22s	36s	Third count spun 3/	22s	36s
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Percent	Number	Inches	Inches	Pounds	Pounds	Pounds	Grade	Grade
NORTH CAROLINA										
Coker 100										
King's Mountain	M	7.9	17	1 1/16	1	109	58	29 (60s)	B	C+
Scotland Neck	M	8.3	18	1 1/16	31/32	104	56	28 (60s)	B	C+
Shannon	SLM	7.7	16	1 1/32	31/32	107	56	28 (60s)	B	C+
Wadesboro	SLM	9.3	14	1 1/32	31/32	106	58	28 (60s)	B	C+
SOUTH CAROLINA										
Coker 100										
Aiken	SLM	8.3	15	1 1/16	31/32	107	57	28 (60s)	C+	C+
Easley	M	9.0	20	1 1/32	15/16	104	55	27 (60s)	B	C+
Minturn	M	6.9	18	1 1/16	31/32	108	57	28 (60s)	B	C+
Walterboro	M	7.9	18	1 1/32	1	110	58	29 (60s)	B	C+
GEORGIA										
Deltapine 14										
Monroe	SLM	9.0	28	1 1/32	1	110	58	29 (60s)	C+	C+
Woodbury	SLM	7.2	28	1 1/16	1 1/16	117	62	30 (60s)	C+	C
Stoneville 2B										
Tyrone	M	7.3	24	1 1/32	1	110	59	29 (60s)	B	C+
ALABAMA										
Deltapine 14										
Barton	M	7.9	14	1 1/32	31/32	107	56	28 (60s)	B+	B
Greensboro	SLM	10.0	15	1 1/32	15/16	102	53	27 (60s)	B	C+
Huntsville	M	8.5	22	1 1/16	1 1/16	115	62	32 (60s)	C+	C+
Sulligent	M	9.2	16	1 1/32	1 1/32	112	60	30 (60s)	B	C+
Stoneville 2B										
Boaz	M	8.2	14	1 1/32	1 1/16	116	63	33 (60s)	B	C+
MISSISSIPPI										
Coker 100										
Midnight	M	8.8	20	1 1/8	1 1/8	122	69	35 (60s)	C+	C
Deltapine 14										
Aberdeen	SLM	10.4	20	1 1/16	1 1/32	112	60	31 (60s)	C+	C+
Belzoni	SLM	9.0	26	1 3/32	1 1/16	118	64	32 (60s)	B	C
Bigbee Valley	M	8.4	12	1 1/32	31/32	107	57	28 (60s)	B	C+
Clarkesdale	M	8.7	16	1 3/32	1 1/32	113	62	31 (60s)	B	C+
Como	M	8.7	10	1 1/16	1 1/32	113	60	30 (60s)	B	C+
Lyon	M	8.1	18	1 3/32	1 3/32	121	65	34 (60s)	B	C+
Moss	M	8.4	22	1 1/16	1 1/32	113	60	31 (60s)	B	C+
Stoneville 2B										
Michigan City	M	8.0	14	1 1/16	1 1/8	121	67	34 (60s)	B	C+
Stoneville	M	9.4	23	1 1/16	1 1/16	116	64	33 (60s)	C+	C
TENNESSEE										
Deltapine 14										
Brownsville	M	8.0	12	1 1/16	1 1/16	116	63	32 (60s)	B	B
Tiptonville	SLM	9.6	22	1 1/16	1 1/16	114	62	32 (60s)	C+	C
Wynnberg	SLM	10.7	31	1 1/16	1 1/16	116	62	33 (60s)	C+	C
MISSOURI										
Deltapine 14										
Marston	M	7.8	20	1 1/16	1 1/32	113	62	31 (60s)	B	C+
Stoneville 2B										
Kennett	M	9.0	17	1 3/32	1 1/16	115	62	32 (60s)	C+	C
ARKANSAS										
Deltapine 14										
Altheimer	M	6.6	14	1 1/16	1 3/32	120	67	33 (60s)	B+	B
Crawfordville	M	8.4	16	1 3/32	1 3/32	121	65	33 (60s)	B	C+
Roseland	SLM	9.9	22	1 3/32	1 1/16	116	64	33 (60s)	C+	C+
Rowden										
Scott	M	8.9	4	1 1/32	15/16	107	56	25 (60s)	B+	B
Swifton	M	8.8	12	1 1/32	1	110	57	28 (60s)	B+	B

(Continued on Page 13)

1/ Classer's designation based on Official Cotton Standards.
2/ Average for three counts of yarn.
3/ Figures in parentheses indicate yarn count spun.
4/ In accordance with yarn appearance standards of American Society for Testing Materials.

Table 1. - Qualities selected for testing and results of fiber laboratory tests of designated varieties of upland cotton grown in standardized variety areas, Crop 1946.
-- Continued --

State, variety, and areas of growth	Selected Quality			Fiber laboratory test results					
				Length (Fibrograph)					
	Grade 1/	Staple Length 1/	Bales Ginned to Dec. 1 2/	Upper half mean	Mean	Uniformity ratio	Fineness (weight per inch of fiber)	Mature fibers	Fiber tensile strength 3/
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Inches	Percent	Inches	Inches	Index	Micrograms	Percent	1,000 lbs. per square inch
LOUISIANA									
Deltapine 14									
Bossier City	SLM	1 1/16	47	1.06	.86	82	4.6	84	78
Chenneyville	SLM	1 1/32	31	1.04	.82	80	4.4	79	70
Holly Ridge	M	1 1/16	15	1.08	.85	79	4.4	72	78
Ville Platte	SLM	1 1/32	29	1.00	.74	74	4.5	80	72
TEXAS									
Acala 1517									
Clint	M	1 3/32	45	1.10	.90	82	4.1	82	82
Deltapine 14									
Calvert	SLM	1 1/32	17	1.00	.73	73	4.2	78	82
Lane City	SLM	1 1/32	15	1.05	.84	80	4.6	82	77
Hibred									
Monroe	SLM	7/8	16	.84	.68	81	5.9	88	74
O'Donnell	SLM	13/16	23	.76	.65	85	6.0	85	82
Mebane									
Anson	SLM	7/8	14	.84	.69	82	5.6	86	80
Tom Bean	M	15/16	17	.90	.73	80	5.6	84	78
Rowden									
Austin	SLM	15/16	40	.90	.70	77	5.4	83	83
Boxelder	SM	15/16	10	.97	.80	82	5.9	87	84
Crandall	M	31/32	28	.97	.76	79	5.2	81	84
Jarrell	M	31/32	17	.92	.72	78	5.2	82	84
Maxwell	SLM	15/16	21	.92	.74	80	5.4	84	84
McKinney	M	15/16	34	.91	.70	76	5.4	83	84
Stoneville 2B									
Harlingen	M	1 1/16	22	1.05	.80	77	4.0	74	80
Robstown	M	1 1/32	22	1.01	.74	74	4.0	73	80
OKLAHOMA									
Stoneville									
Geary	LM	15/16	46	.96	.75	78	5.2	86	82
ARIZONA									
Acala (Shafter)									
Casa Grande	MEW	1 1/16	6	1.05	.88	84	4.2	86	72
Marana	MEW	1 1/32	21	1.06	.86	81	4.2	82	68
Peoria	M	1 1/32	33	1.02	.84	82	4.1	83	78
Safford	MEW	1 1/32	13	1.04	.85	82	4.2	82	72
NEW MEXICO									
Acala 1517									
Fairacres	M	1 3/32	35	1.12	.91	81	4.0	76	81
Acala 2815									
Malaga	M	1 1/16	26	1.08	.85	78	4.1	82	84
Roswell	M	1 3/32	27	1.12	.91	81	4.4	85	80
CALIFORNIA									
Acala (Shafter)									
Chowchilla	SMEW	1 1/16	12	1.04	.84	80	4.2	83	74
Coalinga	SMEW	1 1/16	49	1.06	.84	80	4.4	84	72
Firebaugh	SMEW	1 3/32	25	1.10	.92	84	4.3	81	70
Shafter	SMEW	1 1/16	51	1.06	.86	81	4.4	84	72
Tulare	SMEW	1 1/16	34	1.06	.85	80	4.4	83	72

1/ Classer's designation based on Official Cotton Standards.

2/ Approximate percentage of ginnings in the area that were classed as the selected grade and staple length combination up to December 1.

3/ Converted from Pressley Index according to the following formula: Tensile strength = (10.8116 x Pressley index -0.12).

Table 2. - Classification, manufacturing performance, and carded yarn quality results for designated varieties of upland cotton grown in standardized variety areas, Crop 1946.
-- Continued --

State, variety, and area of growth (1)	Grade 1/ (2)	Picker and card waste (3)	Neps per 100 sq. in. of card web (4)	Staple length: Classer's 1/ (5)	Staple length: Equivalent 2/ (6)	Yarn skein strength: 22s (7)	Yarn skein strength: 36s (8)	Yarn skein strength: Third count spun 3/ (9)	Yarn appearance 4/: 22s (10)	Yarn appearance 4/: 36s (11)
		Percent	Number	Inches	Inches	Pounds	Pounds	Pounds	Grade	Grade
LOUISIANA										
Deltapine 14										
Bossier City	SLM	9.3	16	1 1/16	1 1/32	114	61	30 (60s)	B	C+
Chenneyville	SLM	8.6	36	1 1/32	15/16	101	54	27 (60s)	C+	C+
Holly Ridge	M	8.7	16	1 1/16	1 1/32	113	60	31 (60s)	B	C+
Ville Platte	SLM	8.1	24	1 1/32	15/16	100	54	27 (60s)	B	C+
TEXAS										
Acala 1517										
Clint	M	7.8	20	1 3/32	1 3/16	127	71	37 (60s)	C+	C+
Deltapine 14										
Calvert	SLM	11.5	28	1 1/32	1 1/32	113	60	30 (60s)	B	C+
Lane City	SLM	10.0	20	1 1/32	31/32	105	56	28 (60s)	B	C+
Hibred										
Monroe	SLM	10.4	8	7/8	3/4	86	43	33 (44s)	B+	B
O'Donnell	SLM	11.9	12	13/16	3/4	82	40	142 (14s)	B+	B
Mebane										
Anson	SLM	11.7	10	7/8	25/32	88	45	34 (44s)	B	C+
Tom Bean	M	9.9	16	15/16	7/8	97	50	31 (50s)	B	C+
Rowden										
Austin	SLM	10.9	16	15/16	7/8	97	51	32 (50s)	B+	B
Boxelder	SM	10.0	14	15/16	7/8	100	52	31 (50s)	B+	B
Crandall	M	9.2	12	31/32	31/32	107	57	36 (50s)	B	B
Jarrell	M	10.4	18	31/32	29/32	102	54	34 (50s)	B	C+
Maxwell	SLM	9.8	10	15/16	7/8	99	52	32 (50s)	B+	B
McKinney	M	9.3	16	15/16	7/8	98	49	31 (50s)	C+	C
Stoneville 2B										
Harlingen	M	8.3	20	1 1/16	1 1/8	120	66	35 (60s)	B	C+
Robstown	M	9.4	30	1 1/32	1 1/32	111	61	31 (60s)	B	C+
OKLAHOMA										
Stoneville										
Geary	LM	11.1	15	15/16	29/32	102	54	34 (50s)	B	C+
ARIZONA										
Acala (Shafter)										
Casa Grande	MEW	9.8	18	1 1/16	1 1/32	110	61	31 (60s)	C+	C+
Marana	MEW	9.2	28	1 1/32	31/32	104	56	29 (60s)	C+	C
Peoria	M	9.2	28	1 1/32	1 1/32	112	60	31 (60s)	C+	C
Safford	MEW	9.1	24	1 1/32	1	107	58	29 (60s)	B	C+
NEW MEXICO										
Acala 1517										
Fairacres	M	8.1	21	1 3/32	1 1/8	120	67	35 (60s)	C+	C+
Acala 2815										
Malaga	M	9.2	30	1 1/16	1 5/32	127	71	36 (60s)	C+	C+
Roswell	M	7.5	18	1 3/32	1 3/16	131	71	37 (60s)	B	C+
CALIFORNIA										
Acala (Shafter)										
Chowchilla	SMEW	8.5	27	1 1/16	1	108	58	30 (60s)	C+	C+
Coalinga	SMEW	8.3	22	1 1/16	1 1/32	110	60	30 (60s)	C+	C+
Firebaugh	SMEW	8.1	19	1 3/32	1 1/32	113	61	32 (60s)	C+	C
Shafter	SMEW	8.1	18	1 1/16	1	108	59	30 (60s)	B	C+
Tulare	SMEW	8.2	20	1 1/16	1	109	58	31 (60s)	C+	C+

1/ Classer's designation based on Official Cotton Standards.
2/ Average for three counts of yarn.
3/ Figures in parentheses indicate yarn count spun.
4/ In accordance with yarn appearance standards of American Society for Testing Materials.

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